

299-W18-83 (A7566) Log Data Report

Borehole Information:

Borehole: 299-W18-83 (A7566)		Site: 218-W-4C Burial Ground			
Coordinates (WA St Plane)		GWL ¹ (ft): None	GWL Date: 09/05/06		
North (m) 135166.635	East (m) 566353.348	Drill Date 1967?	TOC Elevation 209.673 m	Total Depth (ft) 152	Type Cable

Casing Information:

Casing Type	Stickup (ft)	Outer Diameter (in.)	Inside Diameter (in.)	Thickness (in.)	Top (ft)	Bottom (ft)
Steel	1.5	6 5/8	6	5/16	0	152

Borehole Notes:

The logging engineer measured the casing diameter using a caliper and steel tape.

Logging Equipment Information:

Logging System:	Gamma 1E	Type:	SGLS (70%) SN: 34TP40587A
Effective Calibration Date:	05/02/06	Calibration Reference:	DOE-EM/GJ1200-2006
		Logging Procedure:	GJO-HGLP 1.6.5, Rev. 1

Logging System:	Gamma 2M	Type:	NMLS SN: H340207279
Effective Calibration Date:	08/02/06	Calibration Reference:	DOE-EM/GJ1283-2006
		Logging Procedure:	GJO-HGLP 1.6.5, Rev. 1

Spectral Gamma Logging System (SGLS) Log Run Information:

Log Run	4	5 repeat	6		
Date	1/22/2007	01/23/2007	01/23/2007		
Logging Engineer	Spatz	Spatz	Spatz		
Start Depth (ft)	151.5	90.5	41.5		
Finish Depth (ft)	40.5	74.5	1.5		
Count Time (sec)	100	100	100		
Live/Real	R	R	R		
Shield (Y/N)	N	N	N		
MSA Interval (ft)	1.0	1.0	1.0		
ft/min	N/A ²	N/A	N/A		
Pre-Verification	AE220CAB	AE221CAB	AE221CAB		
Start File	AE220000	AE221000	AE221017		
Finish File	AE220111	AE221016	AE221057		
Post-Verification	AE220CAA	AE1221CAA	AE221CAA		
Depth Return Error (in.)	-1	0	0		
Comments	No fine-gain adjustment.	No fine-gain adjustment.	No fine-gain adjustment.		

Neutron Moisture Logging System (NMLS) Log Run Information:

Log Run	1	2 Repeat	3		
Date	1/09/07	1/09/07	1/09/07		
Logging Engineer	McClellan	McClellan	McClellan		
Start Depth (ft)	2.0	77.0	92.25		
Finish Depth (ft)	92.0	92.0	152.0		
Count Time (sec)	15	15	15		
Live/Real	R	R	R		
Shield (Y/N)	NA	N	N		
Sample Interval (ft)	0.25	0.25	0.25		
ft/min	NA	NA	NA		
Pre-Verification	BM026CAB	BM026CAB	BM026CAB		
Start File	BM026000	BM026361	BM026422		
Finish File	BM026360	BM026421	BM026661		
Post-Verification	BM026CAA	BM026CAA	BM026CAA		
Depth Return Error (in.)	N/A	- 0.5	-1.0		
Comments	None	Subdirectory change	None		

Logging Operation Notes:

Logging was conducted with a centralizer on each sonde and measurements are referenced to top of casing.

Analysis Notes:

Analyst:	McCain	Date:	03/07/2007	Reference:	GJO-HGLP 1.6.3, Rev. 0
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Pre-run and post-run verifications for the logging systems were performed before and after the day's data acquisition. The acceptance criteria were met.

A casing correction for a 5/16-in. thick casing was applied to the SGLS data. NMLS volume percent moisture values were calculated from net count rate using the calibration data for a 6-in. borehole.

SGLS spectra were processed in batch mode using APTEC SUPERVISOR to identify individual energy peaks and determine count rates. Concentrations were calculated with an EXCEL worksheet template identified as G1EMay06.xls using an efficiency function and corrections for casing and dead time as determined from annual calibrations. The NMLS count rate data were converted to percent volumetric moisture.

Results and Interpretations:

No manmade radionuclides were detected. Cs-137 was encountered at or near the MDL at several isolated points. These are simply statistical fluctuations.

The SGLS total gamma log exhibits a profile very similar to that obtained with a NaI total gamma log in July of 1987.

The SGLS and NMLS repeat logs show good repeatability.

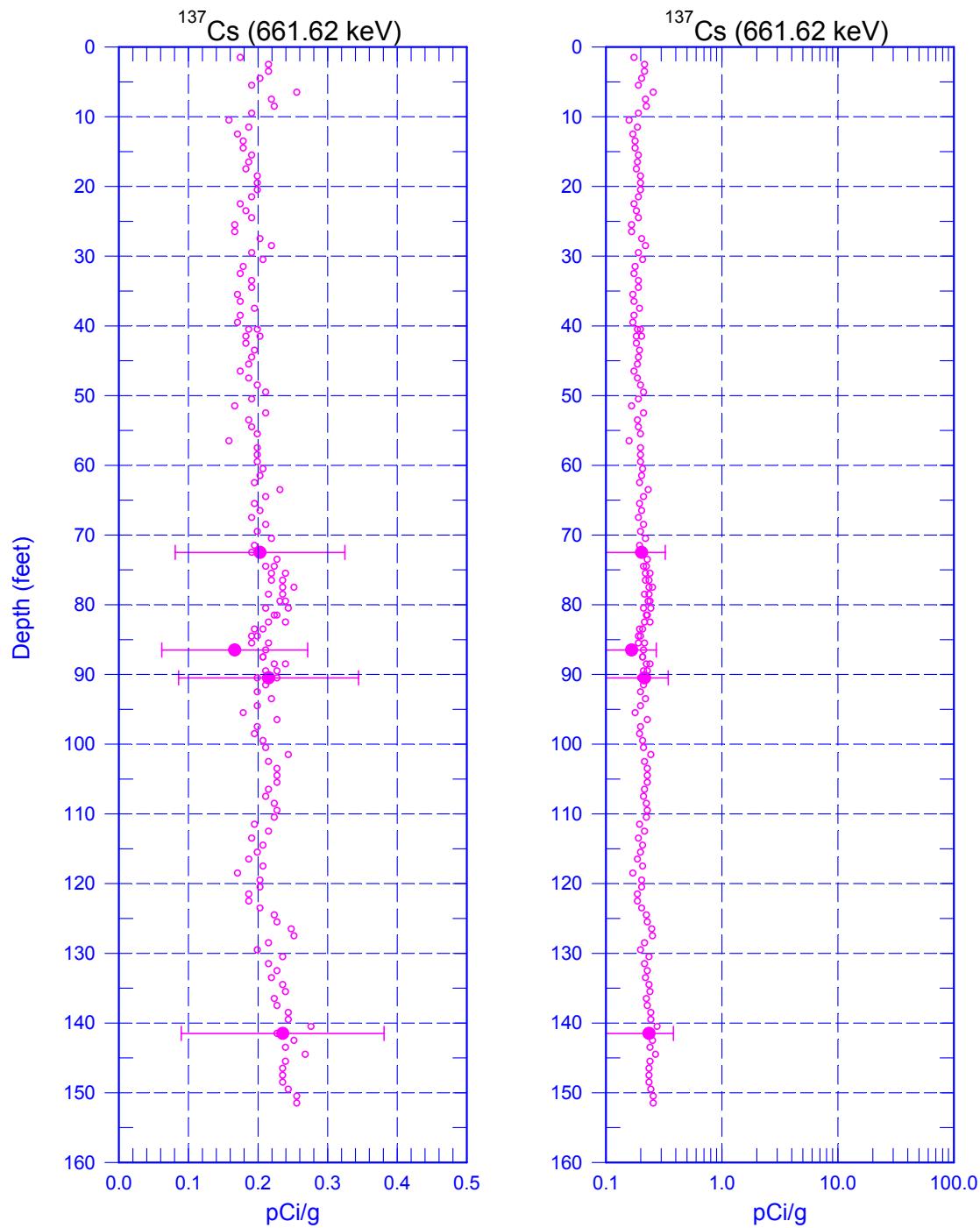
List of Log Plots:

Depth Reference is top of casing
Depth Scale - 20 ft/inch except for repeat logs

Manmade Radionuclides
Natural Gamma Logs
Combination Plot
Combination Plot (0-160 ft)
Total Gamma, Moisture, & Dead Time
Repeat Section of Natural Gamma Logs
Repeat of Moisture

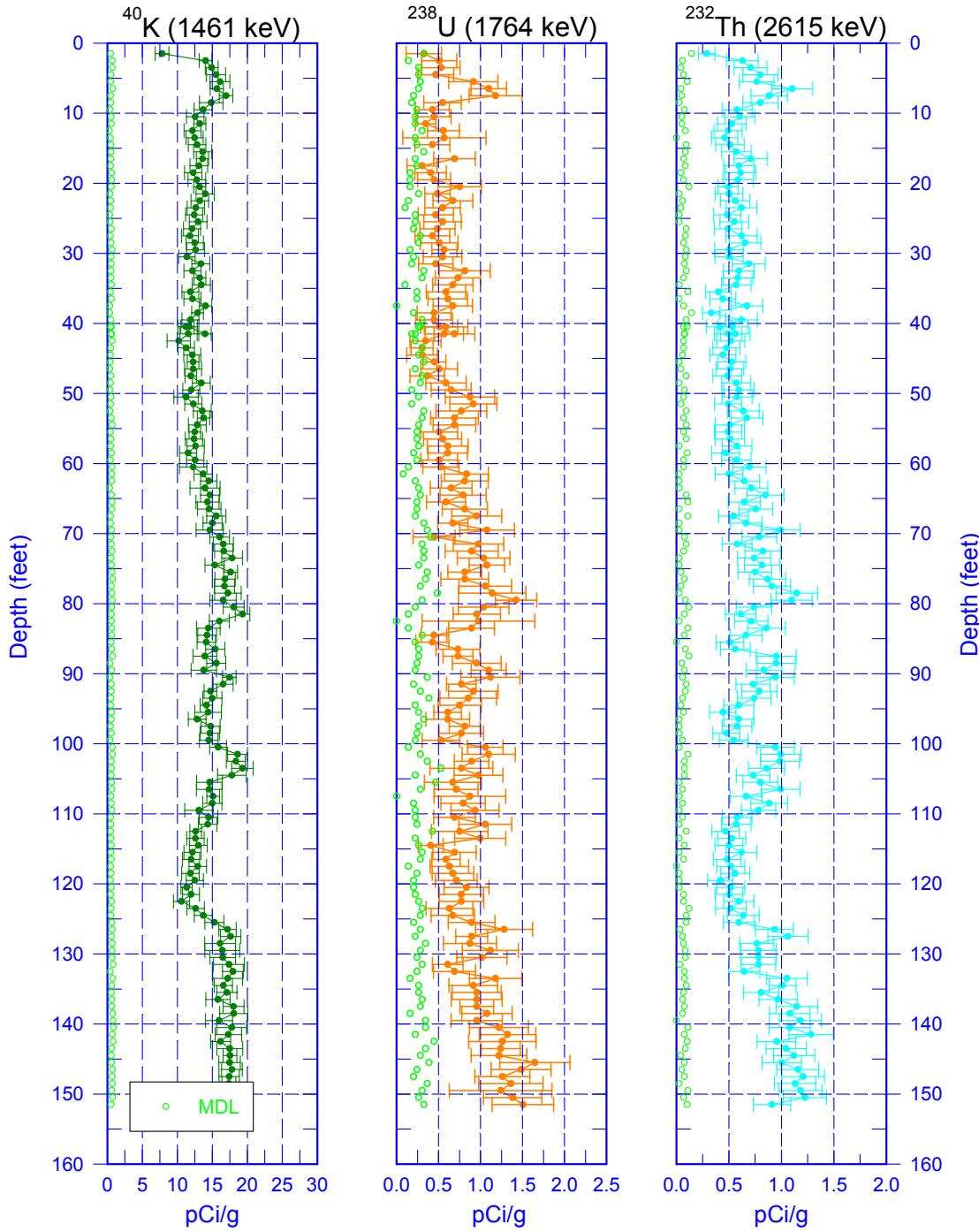
¹ GWL – groundwater level

299-W18-83 (A7566) Manmade Radionuclides



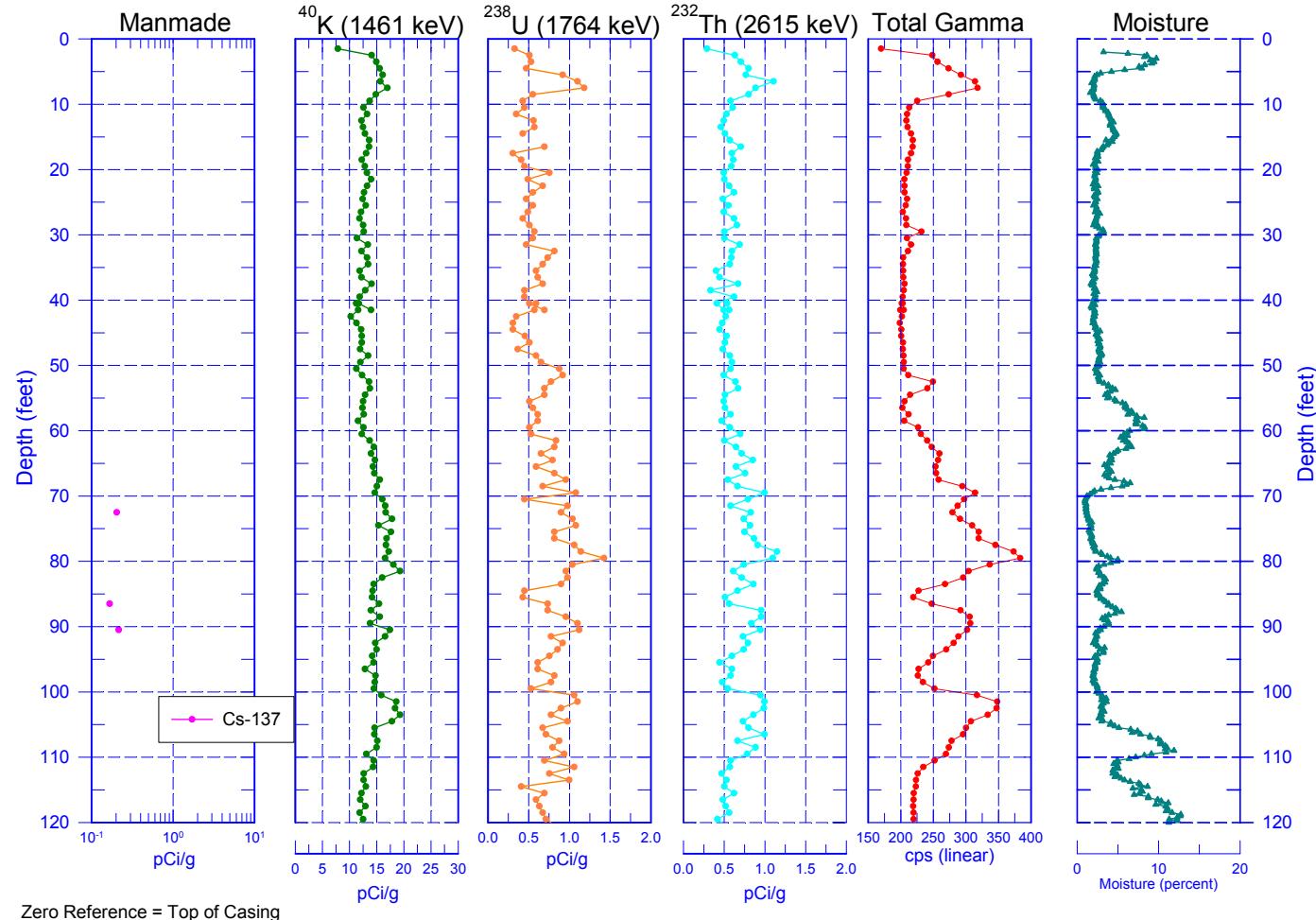
Zero Reference = Top of Casing

299-W18-83 (A7566) Natural Gamma Logs

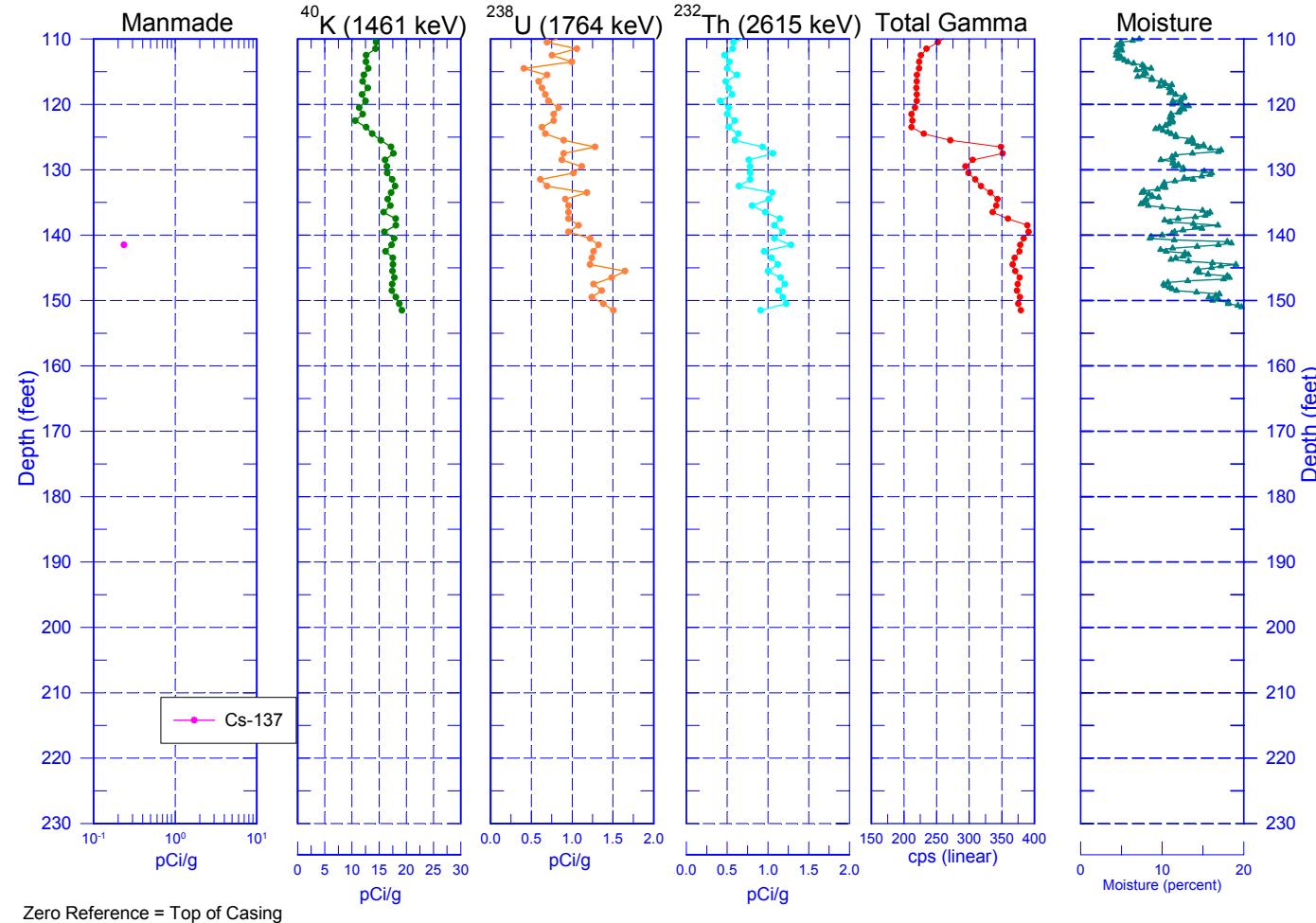


Zero Reference = Top of Casing

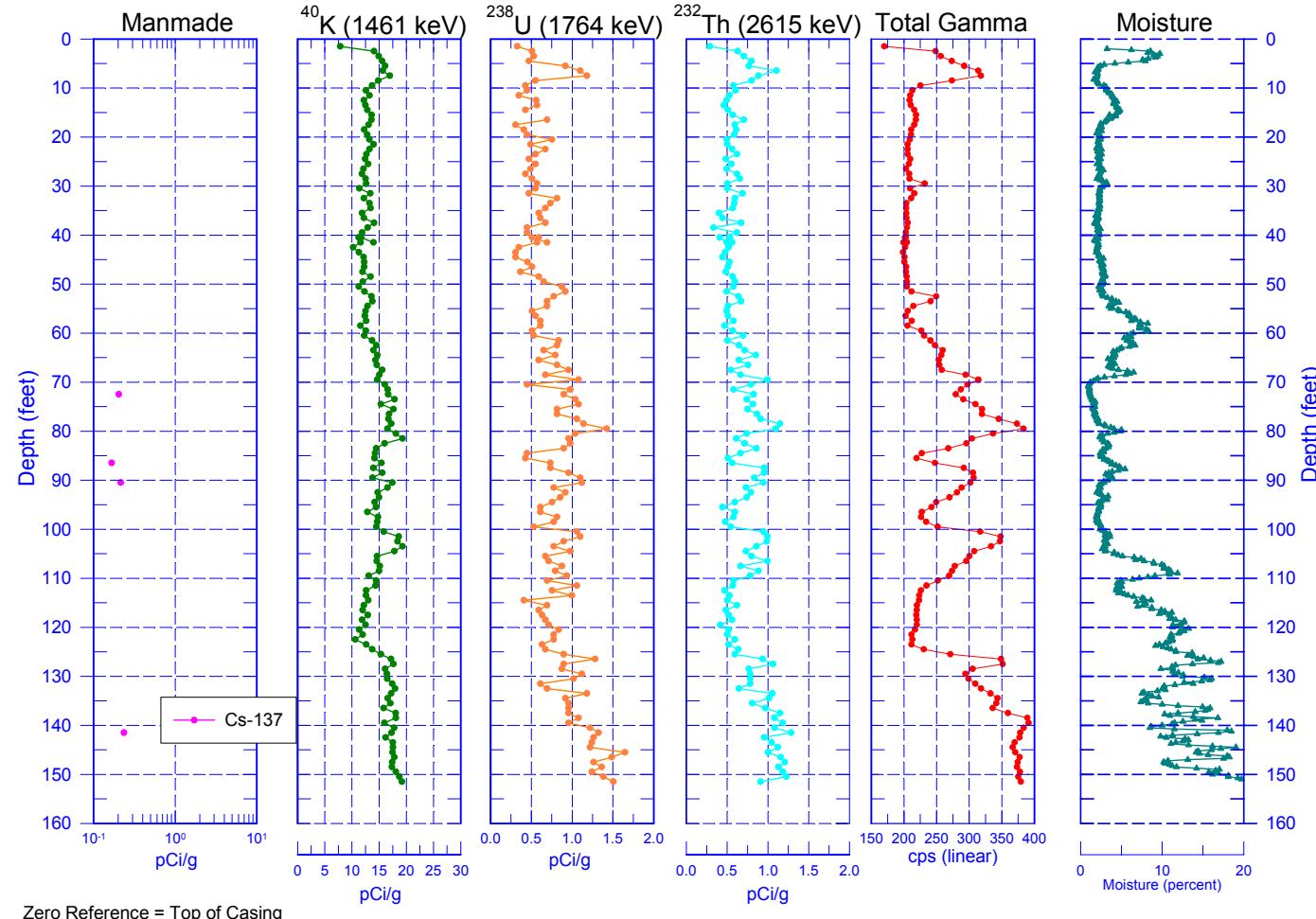
299-W18-83 (A7566) Combination Plot



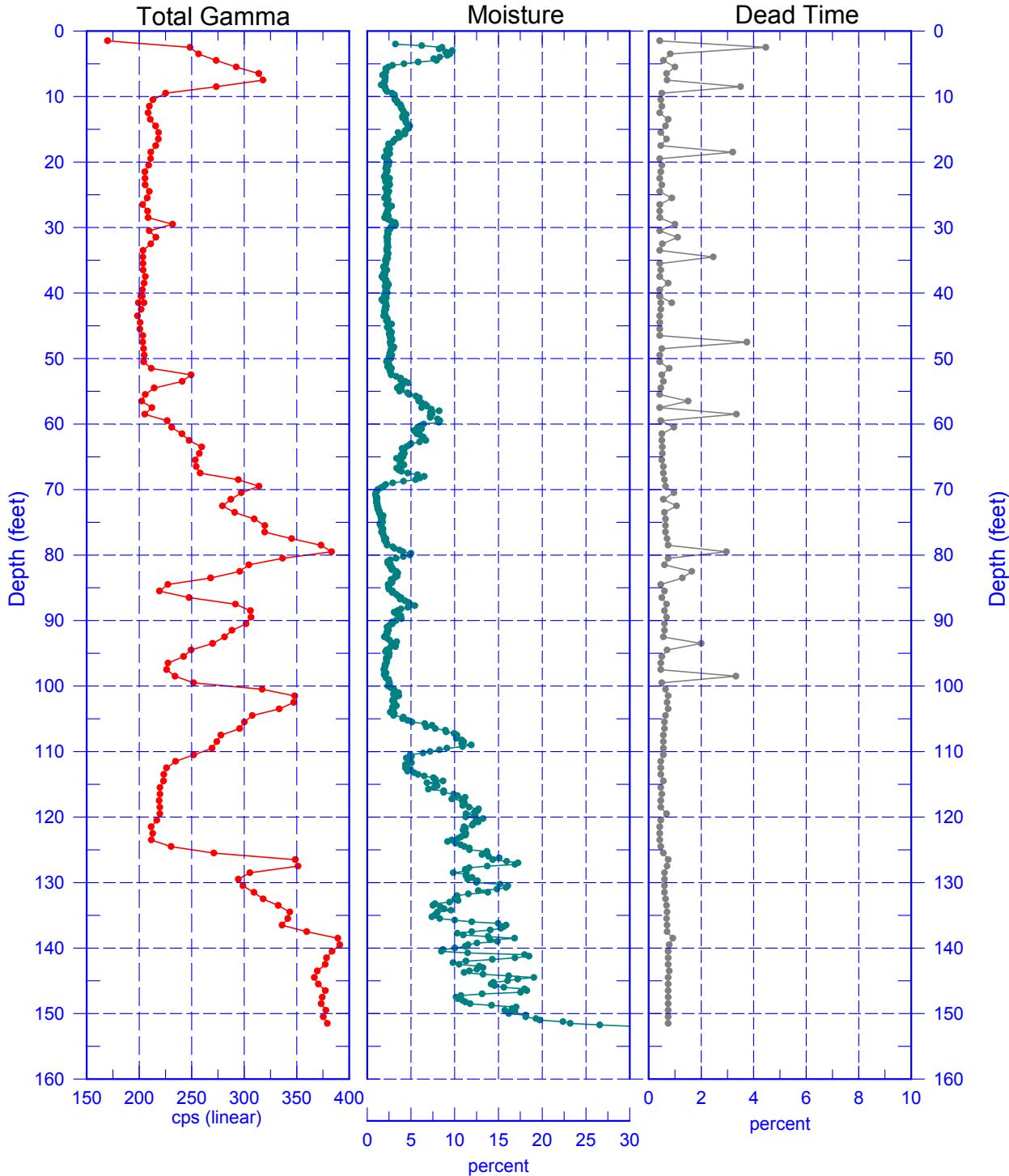
299-W18-83 (A7566) Combination Plot



299-W18-83 (A7566) Combination Plot

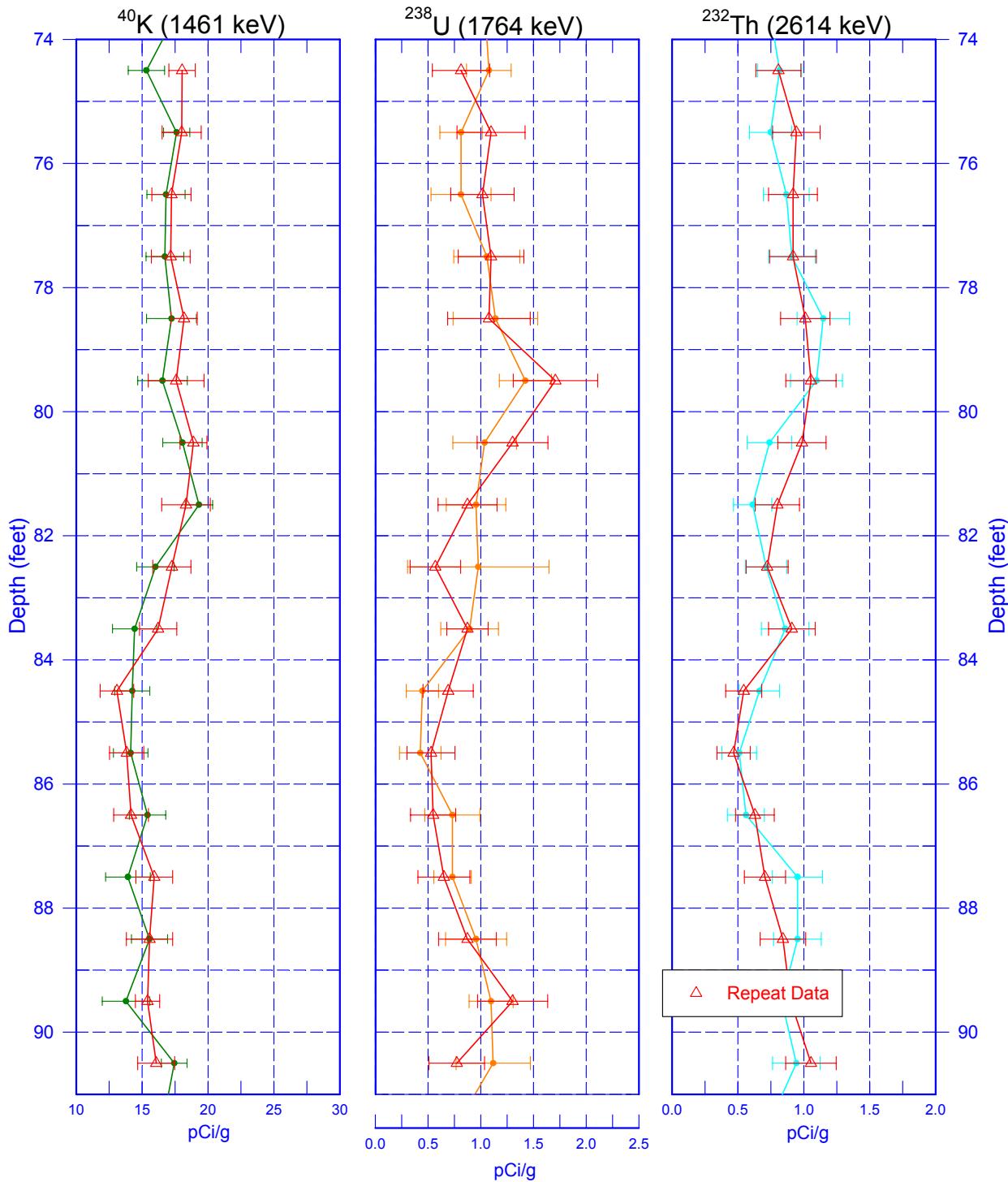


299-W18-83 (A7566) Total Gamma, Moisture, & Dead Time



Reference - Top of Casing

299-W18-83 (A7566) Repeat Section of Natural Gamma Logs



Zero Reference = Top of Casing

299-W18-83 (A7566) Repeat of Moisture

